APPLICATION

FOR

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TITLE: STORING ADVERTISEMENTS

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STORING ADVERTISEMENTS

Background

This invention relates generally to systems that record audio or visual content for subsequent replay.

5   Digital recording devices are available which record audio/visual content for subsequent replay from random access memories. Such recording devices can pause ongoing play of content while continuing to record incoming content. Digital recording devices, using random access

10   memories, are more versatile than videocassette recorders that use tape or serial memories. Thus, digital recording devices are becoming increasingly popular with consumers.

Generally, when the consumer records a television program that includes advertisements, the advertisements

15   are recorded together with the program content. When the recorded content is replayed, the advertisements may be outdated. Thus, the replay of outdated advertisements may seem odd. Moreover, from the advertiser's point of view, the value of repeated play of the content, including the

20   advertisements, may be reduced.

Thus, there is a need for improved techniques for storing advertisements in digital recording devices.

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Brief Description of the Drawings

Figure 1 is a block diagram showing one embodiment of the present invention;

Figure 2 is a flow chart for software that enables commercials to be digitally recorded in accordance with one embodiment of the present invention;

Figure 3 is a flow chart for software that allows the playback of recorded content including commercials in accordance with one embodiment of the present invention; and

Figure 4 is a flow chart for software that allows recorded commercials to be updated in accordance with one embodiment of the present invention.

Detailed Description

Referring to Figure 1, a processor-based system 10 may be capable of digitally recording and playing back audio or video content. The recorded content may include radio broadcasts, television broadcasts, and content distributed over the Internet as examples. The television programming may be distributed in a variety of ways including over airwave broadcasts, via cable distribution and over satellite distribution networks.

The processor-based system 10 may be a desktop computer, a set-top box, or a processor-based appliance to name a few examples. The system 10 may include a processor 12 coupled to an accelerated graphics port (AGP) chipset 14

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in one embodiment of the present invention. A graphics
accelerator 18 is coupled to the chipset 14 via a port 16.
A system memory 8 is also coupled to the chipset 14. In an
embodiment in which the processor-based system 10 is a set-

5   top box, the graphics accelerator 18 may be coupled to a
television receiver 20.

The chipset 14 may be coupled to a bus 22. The bus 22
may couple a television tuner card 24 that includes an
antenna 26 in one embodiment. Thus, in an embodiment

10   wherein which an airwave broadcast is captured by the tuner
card 24, the airwave broadcast may be provided to a storage
30, such as a hard disk drive, via a bridge 28. The
storage 30 may store the captured television in a randomly
accessible fashion. The storage 30 may also store software

15   programs 50, 70 and 80.

The bridge 28 couples the bus 22 to the bus 32. The
bus 32, in one embodiment, may couple to a serial
input/output (SIO) device 34. The device 34 may couple to
peripheral devices such as a mouse 36 and a keyboard 38.

20   The bus 32 may also be coupled to a basic input/output
system (BIOS) storage 42. While one exemplary processor-
based system 10 is illustrated in Figure 1, the present
invention may be implemented on a variety of other
processor-based systems.

25   The software 50, stored on the storage 30, begins by
receiving and compressing audio and/or video content as

indicated in block 52. The content may be received over an
airwave broadcast such as a radio broadcast, a television
broadcast or the like. It may also be received over an
appropriate connection such as an Internet connection, a

5   cable connection or a satellite receiver.

In the course of receiving and compressing the
content, a commercial may be identified within the content
as indicated in block 54. A variety of techniques may be
utilized to identify the commercial. In one case, a

10   watermark may be included within commercials. The
watermark may be imperceptible to users. However, the
watermark may be detected and used as a trigger to identify
the location within the content of a commercial.

In another embodiment, the commercial may identified

15   by looking for auxiliary information included in the
television broadcast. For example, closed captioning data
may be scanned to locate particular keywords that are known
to correspond to particular advertisements.

As another example, a television advertisement

20   schedule may be utilized to determine, based on the
currently tuned channel, local time zone, and time of day
when a commercial should be expected. Similarly, in
enhanced or interactive television distribution systems,
for example according to the Advanced Television

25   Enhancement Forum (ATVEF) Specification, announcements may
be provided which may aid in detecting the presence of a

commercial.   See ATVEF Enhanced Content Specification
(1998).

When a commercial is identified within the received
content, a check at diamond 56 determines whether the
5   commercial that is being received is one that has been
stored before.   If not, in which case the commercial is
considered a "new" commercial, the commercial may be
recorded as indicated in block 58.

In one embodiment of the present invention, the
10   commercial may be recorded to a different memory or a
different memory location than other content.   This may
facilitate accessing the commercial in accordance with some
embodiments of the present invention.

When the commercial is recorded, a marker may be
15   inserted into the ongoing content record in order to
identify the location to insert a commercial.   In addition,
a pointer may be provided to indicate where the commercial
has been stored, when the commercial is stored in a
different storage or in a different storage area than the
20   rest of the content.

The new commercial may be identified by keywords or
other information and added to a list of commercials that
have previously been stored as indicated in block 60.   In
this way, a list of commercials may be utilized to
25   determine whether any received commercial is one that has
been received in the past.   For example, the closed

captioning script associated with the first five or ten words of a commercial may be recorded and stored as a commercial list. Then, the next time a commercial is received, a check may determine whether the first five or

5   ten words are identical to any commercial already on the commercial list.

Finally, the update instructions for a particular commercial may be stored as indicated in block 62. In enhanced or interactive transmissions, the update

10   information may be broadcast as auxiliary information. In other cases, the update information may be encoded with the commercial. As still another alternative, the update information may be accessed from a database. For example, based on telltale words within the commercial, such as the

15   first five or ten words, a database may be consulted to determine how frequently the particular commercial should be updated. As one example, the database may be accessed automatically over the Internet. Once the update instructions are obtained, they may be stored in

20   association with an update database. For example, in accordance with one embodiment, at predetermined times, all of the stored commercials may be automatically updated in accordance with stored update instructions.

If the commercial is one that has previously been

25   stored, the appropriate marker and pointer are stored in connection with the ongoing content in an embodiment in

which the commercials are stored in a separate storage from the content. .In an embodiment in which the content and commercials are stored together, it may unnecessary to insert the marker and pointer into the stored content.

5   However, storing the commercials and the content separately may facilitate separate access to these materials. In addition, by storing the materials separately, it is possible to avoid re-storing commercials which have been previously stored. This may save storage space and

10   increase the amount of programming that may be stored on a given system 10.

The play software 70, shown in Figure 3, also stored on the system 10 on the storage 30, in accordance with one embodiment of the present invention, enables content to be

15   played back and stored commercials to be inserted into the content at the appropriate locations. Initially, the stored content is decompressed and played as indicated in block 72. If a marker is located when playing the stored content, as determined in diamond 74, a commercial to be

20   inserted at the marker is automatically located and played as indicated in block 76. The commercial may be located using the pointer that points the software to the storage location where the commercial has been stored. If the content playback is completed, as determined in diamond 78,

25   the flow ends. Otherwise, the flow recycles and the content continues to decompressed and played.

Turning finally to Figure 4, the update software 80, also stored on the storage 30, in accordance with one embodiment of the present invention, enables automatic updates of stored commercials. As previously indicated,

5   update instructions may be acquired and stored at the time when a commercial is first received. In other embodiments, update instructions may thereafter be obtained. For example, by identifying a commercial using codes or keywords as two examples, a system may automatically

10   determine from a database when the commercial should be updated. In one embodiment, each system 10 may include a database that has been compiled for each commercial in the acquired commercials list. The database may include the times when a commercial should be updated.

15   When the update time arrives for a given commercial as determined at diamond 82, a commercials list for a given system 10 may be acquired as indicated in block 84. The list may then be uploaded, as indicated in block 86, together with the pointers which point to the locations

20   where the information associated with the commercial is stored on the system 10. The uploading may occur from a client to a server over an appropriate connection such as an Internet connection.

The server may then provide the appropriate updates

25   for the client over an appropriate broadcast transport back to the client as indicated in block 88. A client may store

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the replacements, as indicated in block 90, in the same locations previously utilized. If the server provides the same pointers that were used to originally store the outdated version of the commercial, the commercials may automatically be stored in the same locations where they were originally stored. In such case, when a marker is reached during content playback, the pointer associated with the marker may be utilized to obtain the commercial. Now, instead of obtaining the outdated commercial, an updated commercial may be received.

For example, a commercial for a given automobile dealer may advertise a Fourth of July sale. After the Fourth of July has already been passed, the automobile dealer may cause an updated version of its current commercial to be automatically utilized to replace the now outdated commercial. Thus, each time the user replays the stored content, the user may view the most current advertisement. This may improve the effectiveness of the advertising material.

In some embodiments of the present invention, a stored advertisement may be replaced with an updated advertisement. However, in other embodiments, the stored advertisement may be replaced with another advertisement that does not constitute an update. For example, a digital recording device may automatically replace recorded advertisements with other advertisements. In one

embodiment, the provider of the digital recording device may cause advertisements originally recorded with content to be subsequently replaced with advertisements sponsored or provided by the provider of the digital recording

5 device. Thus, in some cases, the advertisements that were originally included with the content may be replaced by other advertisements. These other advertisements may generate revenue for a service provider or the provider of the digital recording device as two examples.

10 In one embodiment, at periodic intervals, the digital recording device could download a number of advertisements to be utilized to replace existing advertisements recorded with the content. Thereafter, the advertisements that were originally recorded with content could be replaced with new

15 advertisements. In some cases, the replacing advertisements may be updates of existing advertisements. In other cases, the replacing advertisements may be totally new advertisements unrelated to the advertisements they replace.

20 While the present invention has been described with respect to a limited number of embodiments, those skilled in the art will appreciate numerous modifications and variations therefrom. It is intended that the appended claims cover all such modifications and variations as fall

25 within the true spirit and scope of this present invention.

What is claimed is: